

Patent claims

1. Lighting unit for vehicles with a plurality of semiconductor light sources distributed in a grid, the grid of semiconductor light sources being divided into at least two grid segments, the grid segments being each activatable independently of each other and/or assigned to a different light function, with an optical element in the beam path of a light beam emitted by the semiconductor light sources, characterised in that the semiconductor light sources (3) are arranged on a common carrier substrate (5), with a chip cover (6) transparent to light in the direction of light propagation, in that the chip cover (6) is filled with a light-scattering and/or light-converting auxiliary material (8) and in that a shading device (9) is provided such that, in the boundary region between the activated grid segment (10) and the unactivated grid segment (11), a relatively steep transition of light intensity is adjustable to form a light/dark boundary.

2. Lighting unit according to claim 1, characterised in that the shading device (9) is arranged in the boundary region between the first grid segment (10) and the second grid segment (11).

3. Lighting unit according to claim 1 or 2, characterised in that the shading device (9) is designed as a partition which separates the two grid segments (10, 11) from each other and which projects from the carrier substrate (5) in the direction of light propagation.

4. Lighting unit according to claim 3, characterised in that the partition (9) extends perpendicularly to the carrier substrate (5) and in that the free end of the partition (9) is arranged at a distance from and/or tapering towards a front side (15) of the chip cover (6).

5. Lighting unit according to any of claims 1 to 4, characterised in that the semiconductor light sources (3) of the grid segments (10, 11) are designed as a

plurality of chips emitting UV radiation and/or emitting blue light, and arranged in the form of a semiconductor light source array.

6. Lighting unit according to claim 5, characterised in that the semiconductor light source array (4) is arranged in a focal plane of the optical element (2, 16).

7. Lighting unit according to any of claims 1 to 6, characterised in that the partition (9) has a longitudinal extent in the direction of the path of the carrier substrate (5) corresponding to the formation of a light/dark boundary.

8. Lighting unit according to any of claims 1 to 7, characterised in that the auxiliary material (8) is formed as a light converter, in particular by a luminescent material.

9. Lighting unit according to any of claims 1 to 8, characterised in that the carrier substrate (5) is of flat or curved construction.

10. Lighting unit according to any of claims 1 to 9, characterised in that on the front side (15) of the chip cover (6) facing away from the carrier substrate (5) is arranged an optical element (16) resting directly on the chip cover (6).